

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/043,696	ZELEK ET AL.	
	Examiner Romain Jeanty	Art Unit 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 10/17/06 and 12/22/06.
2.  The allowed claim(s) is/are 1, 4-9, 11-15, 18-20.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

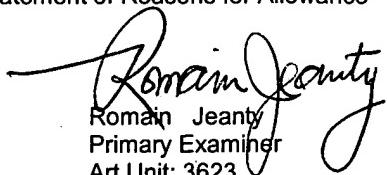
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.



Romain Jeanty  
Primary Examiner  
Art Unit: 3623

### **Examiner's Amendment**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Benjamin C. Stasa on December 22, 2006.

### **AMENDMENT TO THE CLAIMS**

The listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listings of claims:**

1. (Currently Amended) A method for product optimization, the method comprising:  
identifying at least one aspect of a product that is critical to customer satisfaction and a target value for at least one aspect;  
characterizing the at least one aspect in terms of at least one contributing factor y, and characterizing the at least one contributing factor y in terms of at least one control factor x; and  
wherein the at least one contributing factor y is additionally characterized in terms of at least one contributing noise factor n and a transfer function y=f(x,n);

receiving input defining a nominal value and a variability value for the at least one noise factor n;  
outputting a nominal and a variability value the at least one contributing factor y based on the transfer function, a nominal design value and variability value for the at least one control factor x, and the nominal value and the variability value for the at least one noise factor n; and  
adjusting nominal design values for the at least one control factor x such that variability in the at least one contributing factor y is minimized and the target value for the at least one aspect is attained thereby optimizing the product.

2. (Cancelled)

3. (Cancelled)

4. (Original) The method of claim 1 wherein the at least one aspect and target value for the at least one aspect are identified based on consumer insight.

5. (Original) The method of claim 1 further comprising identifying a target value for the at least one aspect in an aged condition; and minimizing variability in the at least one contributing factor such that the target value for the at least one aspect in the aged condition is attained.

Art Unit: 3623

6. (Original) The method of claim 1 additionally comprising minimizing variability in the at least one contributing factor by reducing variability in the at least one control factor.

7. (Original) The method of claim 1 wherein the variability in the at least one contributing factor is reduced to a  $6\sigma$  level.

8. (Original) The method of claim 1 further comprising assessing the extent to which the target value is attained over the product life.

9. (Currently Amended) A computer-implemented system for facilitating product optimization, the system configured to:

receive input defining a transfer function characterizing a contributing factor y to a product aspect that is critical to customer satisfaction in terms of at least one control factor x for the contributing factor y;

receive input defining a nominal design value and a variability value for the at least one control factor x; and

output a mean and variability value for the contributing factor y based on the transfer function and the nominal and variability values for the at least one control factor x wherein a transfer function  $y=f(x,n)$  characterizes the contributing factor y in terms of the at least one control factor x and at least one noise factor n, the system additionally configured to receive input defining a nominal value and a variability value for each at least one noise factor n and

output a nominal and a variability value for the contributing factor y based on the transfer function, the nominal design value and variability value for the at least one control factor x, and the nominal value and the variability value for the at least one noise factor n thereby facilitating product optimization.

10. (Cancelled)

11. (Original) The system of claim 9 wherein the variability in the contributing factor is reduced in response to input adjusting the nominal design value(s) for the at least one control factor.

12. (Original) The system of claim 9 wherein the variability in the contributing factor is reduced in response to input reducing the variability value(s) for the at least one control factor.

13. (Original) The system of claim 11 or 12 wherein the variability of the contributing factor is reduced to a  $6\sigma$  level.

14. (Currently Amended) A method for product optimization, the method comprising:

a step for identifying at least one aspect of a product that is critical to customer satisfaction and a target value for the at least one aspect;

a step for characterizing the at least one aspect in terms of at least one contributing factor

y;

a step for characterizing the at least one contributing factor y in terms of at least one control factor x and at least one noise factor n wherein the step for characterizing the at least one contributing factor y involves a step for defining a transfer function  $y=f(x,n)$ ; [[and]]

a step for receiving input defining a nominal value and a variability value for the at least one noise factor n;

a step for outputting a nominal and a variability value for the at least one contributing factor y based on the transfer function, a nominal design value and variability value for the at least one control factor x, and the nominal value and the variability value for the at least one noise factor n; and

a step for minimizing variability in the at least one contributing factor y such that the target value for the aspect is attained thereby optimizing the product.

15. (Original) The method of claim 14 wherein the step for minimizing variability in the at least one contributing factor involves adjusting a nominal design value for the at least one control factor.

16. (Cancelled)

17. (Cancelled)

18. (Original) The method of claim 14 wherein the step for minimizing variability in the at least one contributing factor involves reducing variability in the at least one control factor.

19. (Original) The method of claim 14 additionally comprising a step for assessing the extent to which the target value for the aspect is attained over the product life.

20. (Currently Amended) A computer-implemented system for facilitating product optimization, the system comprising:

a means for receiving a transfer function  $y = f(x, n)$  characterizing a contributing factor  $y$  to a product aspect that is critical to customer satisfaction in terms of at least one control factor  $x$  and at least one noise factor  $n$  for the contributing factor;

a means for receiving a nominal design value and a variability value for the at least one control factor  $x$ ; [[and]]

a means for defining a nominal value and a variability value for the at least one noise factor n; and

a means for computing a mean and variability value for the contributing factor  $y$  based on the transfer function, [[and]] the nominal design and variability values for the at least one control factor  $x$ , and the nominal and variability value for the at least one noise factor  $n$  thereby facilitating product optimization.

21. (Cancelled)

### **Allowable Subject Matter**

2. Claims 1, 4-9, 11-15, and 18-20 are allowed.

### **Reasons for Allowance**

3. The following is an examiner's statement of reasons for allowance:

The closest prior art is to Ostrowsi et al (U.S. Patent No. 6,377,908). Ostrowski et al disclose a product design tradeoff method for improving product quality in the design for six sigma (DFSS) process. One component of DFSS is the development of transfer functions to represent the response surface of the design space of interest. A transfer function represents the product at a variety of levels (e.g. component, sub-assembly, assembly, entire product, etc.). However, Ostrowski et al fail to disclose outputting a nominal and a variability value the at least one contributing factor  $y$  based on the transfer function, a nominal design value and variability value for the at least one control factor  $x$ , and the nominal value and the variability value for the at least one noise factor  $n$  as recited in independent claim 1.

The closest prior art is to Ostrowsi et al (U.S. Patent No. 6,377,908). Ostrowski et al disclose a product design tradeoff method for improving product quality in the design for six sigma (DFSS) process. One component of DFSS is the development of transfer functions to represent the response surface of the design space of interest. A transfer function represents the product at a variety of levels (e.g. component, sub-assembly, assembly, entire product, etc.). However, Ostrowski et al fail to disclose output a mean and variability value for the contributing factor  $y$  based on the transfer function and the nominal and variability values for the at least one

Art Unit: 3623

control factor x wherein a transfer function  $y=f(x,n)$  characterizes the contributing factor y in terms of the at least one control factor x and at least one noise factor n, the system additionally configured to receive input defining a nominal value and a variability value for each at least one noise factor n and output a nominal and a variability value for the contributing factor y based on the transfer function as recited in independent claim 9.

The closest prior art is to Ostrowsi et al (U.S. Patent No. 6,377,908). Ostrowski et al disclose a product design tradeoff method for improving product quality in the design for six sigma (DFSS) process. One component of DFSS is the development of transfer functions to represent the response surface of the design space of interest. A transfer function represents the product at a variety of levels (e.g. component, sub-assembly, assembly, entire product, etc.). However, Ostrowski et al fail to disclose outputting a nominal and a variability value for the at least one contributing factor y based on the transfer function, a nominal design value and variability value for the at least one control factor x, and the nominal value and the variability value for the at least one noise factor n as recited in dependent claim 14.

The closest prior art is to Ostrowsi et al (U.S. Patent No. 6,377,908). Ostrowski et al disclose a product design tradeoff method for improving product quality in the design for six sigma (DFSS) process. One component of DFSS is the development of transfer functions to represent the response surface of the design space of interest. A transfer function represents the product at a variety of levels (e.g. component, sub-assembly, assembly, entire product, etc.). However, Ostrowski et al fail to disclose computing a mean and variability value for the contributing factor y based on the transfer function, [[and]] the nominal design and variability

values for the at least one control factor x, and the nominal and variability value for the at least one noise factor n thereby facilitating product optimization as recited in independent claim 20.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Kaminski et al (U.S. Patent No. 6,725,112) discloses a method for optimizing a product design. The method includes specifying a plurality of application parameters for the product. A plurality of predetermined factors and responses are obtained in response to the plurality of application parameters. A transfer function is obtained which relates at least one factor to at least one response. The transfer function is optimized in response to user-defined optimization criteria to generate an optimized factor and an optimized response. The optimized factor and the optimized response are then displayed.

b. Rick et al (WO0133393) disclose a method for evaluating product design involving a transfer function.

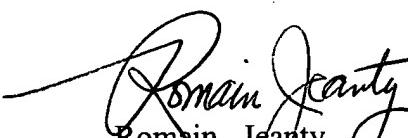
c. Dreze et al (A web-based methodology for product design evaluation and optimization) discloses the evaluation and design of new products design involving a function.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Romain Jeanty whose telephone number is (571) 272-6732. The examiner can normally be reached on Mon-Thurs 7:30 am. to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 26, 2006



Romain Jeanty  
Primary Examiner  
Art Unit 3623